

Title**WETLAYER PROCESS FOR MANUFACTURE OF
HIGHLY-ORIENTED FIBROUS MATS****ABSTRACT**

A mat containing highly machine direction oriented (90% or greater), discontinuous reinforcement fibers, is produced on inclined wire or rotary paper making machinery. Fibers are first uniformly dispersed in an aqueous medium containing thickeners and wetting agents. In one embodiment, antifoaming agents are also added to prevent floating fibers which entangle and reduce orientation. Thermoplastic fibers or particles may also be included. Stock is brought into an open headbox in a flow pattern which allows the fibers to decelerate before approaching the porous suction belt (wire). As the fibers approach the suction belt, the fibers begin to turn and align in the streamline so as to present one end toward the suction wire. The leading ends of the fibers are gripped by the moving belt which drags the fibers out of the dispersion stock in a straight line. The porous mat produced may be dried and bonded through hot air, heat and/or pressure, or chemical binders. Stacks of such mats may be compressed partially to produce porous structures, or fully to produce impervious, rigid structural panels or shapes.